

DETAILED ACTION

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List of Prior Art

U.S. Pub. No. 2003/0108236 (filed Oct. 24, 2002) (“Yoon”).

U.S. Pat. No. 6,144,701 (issued Nov. 7, 2000) (“Chiang”).

Continued Examination Under 37 C.F.R. § 1.114

[1] A request for continued examination under 37 C.F.R. § 1.114, including the fee set forth in 37 C.F.R. § 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 C.F.R. § 1.114, and the fee set forth in 37 C.F.R. § 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 C.F.R. § 1.114. Applicant's submission filed on Aug. 18, 2009 has been entered.

Amendments & Claim Status

[2] This office action is responsive to “Amendment After Final Action Under 37 C.F.R. 1.116” (Amendment) received on Jun. 18, 2009. Claims 1-2 and 4-10 remain pending; claim 3 cancelled.

Drawings

[3] The drawings were received on Jun. 18, 2009. These drawings are acceptable.

Response to Arguments

Remarks Moot regarding Rejections Under 35 U.S.C. § 102, 103

[4] Amendment at 12-14 regarding rejected Claim 2 under 35 U.S.C. § 102(b) as being anticipated by Suzuki (U.S. Pat. No. 6,573,912); rejected Claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki and Suzuki in view of Gadh (U.S. Pat. No. 6,525,732) have been respectfully and fully considered, but are now found moot in view of the new grounds of rejection below.

Remarks Persuasive regarding Rejections Under 35 U.S.C. § 103

[5] Amendment at 12-15 regarding rejected Claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki and Suzuki in view of Gadh; rejected Claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki in view of Gadh; rejected Claims 6 and 8 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki and Suzuki in view of Melen (U.S. Pat. No. 6,631,205); and rejected Claims 7 and 9-10 under 35 U.S.C. § 103(a) as being unpatentable over Suzuki in view of Melen have been respectfully and fully considered, and are found persuasive. See allowable subject matter below.

Claim Rejections - 35 U.S.C. § 103

[6] The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Yoon in view of Chiang

[7] **Claims 1 and 2** are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. No. 2003/0108236 (filed Oct. 24, 2002) (“Yoon”) in view of U.S. Pat. No. 6,144,701 (issued Nov. 7, 2000) (“Chiang”).

Regarding **Claim 1**, while Yoon discloses an image data transmitting apparatus (fig. 29), comprising:

a request information receiving unit (fig. 29, item 2950) that receives client's request information ("EYE LENS MOTION DATA" at fig. 29) transmitted by way of a network (the "wavy" lines in fig. 29 between camera and display site; "[e]ach transmitter 806 and 808 transmits the combined data 802 and 804 to the display site 82 through a network 84" at ¶ 0147);

a request information analyzing unit (fig. 29, item 2940) that analyzes the request information received by the request information receiving unit;

a multiple viewpoint image supply unit (fig. 29, items 2910, 2920, 2940) which selects necessary image data (¶ 0212) of images taken by a plurality of cameras (fig. 29, items 30, 32), based on viewpoint information from the request information analyzed by the request information analyzing unit and supplies selected data (the arrows from 30, 32 to 2900, 2930, respectively);

an image generating unit (fig. 29, items 2900, 2930 for items 30, 32, respectively) which, based on image data supplied from the multiple viewpoint image supplying unit, generates left eye viewpoint image data (the arrow from item 30 to item 2900) and right eye viewpoint image data (the arrow from item 32 to item 2930) of an image viewed from a viewpoint in conformity with the request information;

an image synthesizing unit (unit responsible for fig. 11, item 1180) that synthesizes the left eye viewpoint image data and the right eye viewpoint image data generated by the image generating unit ("another display device such as a HMD. . .may be used" at ¶0208; the HMD configuration is shown in fig. 12a that can replace the fig. 12b configuration in fig. 29), based on display unit information from the request information, by joining the left eye viewpoint image data and the right eye viewpoint image data side-by-side (fig. 12a, items 1200, 1220 are side-by-side; e.g., fig. 1b, item 160);

a transmitting unit (unit responsible for fig. 11, item 1180; fig. 8, items 806, 808) that transmits the image data to the network (the "wavy" lines in fig. 29 between camera and display site; "[e]ach transmitter 806 and 808 transmits the combined data 802 and 804 to the display site 82 through a network 84" at ¶ 0147); and an image data receiving apparatus (items below the dashed line in fig. 29; "display site" item 82 at fig. 8) that includes,

a receiving unit (fig. 29, items 2960, 2970) that receives the image data via the network,
an image processing unit (fig. 29, items 2980, 2990) that processes the image data into a stereoscopic display format (the HMD configuration is shown in fig. 12a that can replace the fig. 12b configuration in fig. 29, which is a stereoscopic display format) so as to be displayable on a display unit (fig. 29, item 3000; e.g., fig. 1b, item 170), the display unit displaying image data processed by the image processing unit,

a request information input unit (fig. 29, item 3000) that allows input of the client's request information ("EYE LENS MOTION DATA" at fig. 29), and

a request information transmitting unit (fig. 29, item 3010) that transmits the request information to the network,

Yoon does not explicitly disclose (i) the multiple viewpoint image supply unit selecting necessary image data from coded and stored multiple viewpoint image data of images, and then decodes; (ii) a coding unit that encodes image data synthesized by the image synthesizing unit; and (iii) a decoding unit that decodes the encoded image received by the receiving unit.

Chiang teaches a stereoscopic video coding and decoding system (fig. 2) that includes a (i) a coding unit (fig. 2, items 205, 225) that encodes image data synthesized by a image synthesizing unit (unit responsible for incoming items 200, 210 of fig. 2); (ii) a decoding unit (fig. 2, items 235, 250) that decodes the encoded image received by a receiving unit (fig. 2, item 230); and (iii) a multiple viewpoint image supply unit (fig. 2, item 245) selecting necessary image data (from items 240, 250 at fig. 2) from coded and stored multiple viewpoint image data of images (MPEG-2 encoded and stored images that came from fig. 2, item 255).

It would have been obvious to one of ordinary skill in the art at the time the invention was made (i) for the image data selected by the multiple viewpoint image supply unit of Yoon to be coded and stored multiple viewpoint image data of images as taught by Chiang; and (ii) for the system of Yoon to include a coding unit that encodes image data synthesized by the image synthesizing unit; and a decoding unit that decodes the encoded image received by the receiving unit as taught by Chiang "to achieve stereoscopic coding of video." Chiang at 1:44-45. The system of Chiang teaching the encoding/decoding process above "provides better reproduction of the perspective viewpoint difference between the left and right channels". Chiang at 4:9-12.

Regarding **Claim 2**, while Yoon discloses an image data transmitting apparatus (fig. 29), comprising:

- a request information receiving unit (fig. 29, item 2950) that receives client's request information ("EYE LENS MOTION DATA" at fig. 29) transmitted by way of a network (the "wavy" lines in fig. 29 between camera and display site; "[e]ach transmitter 806 and 808 transmits the combined data 802 and 804 to the display site 82 through a network 84" at ¶ 0147);

- a request information analyzing unit (fig. 29, item 2940) that analyzes the request information received by the request information receiving unit;

- a multiple viewpoint image supply unit (fig. 29, items 2910, 2920, 2940) which selects necessary image data (¶ 0212) of images taken by a plurality of cameras (fig. 29, items 30, 32), based on viewpoint information from the request information analyzed by the request information analyzing unit and supplies selected data (the arrows from 30, 32 to 2900, 2930, respectively);

- an image generating unit (fig. 29, items 2900, 2930 for items 30, 32, respectively) which, based on image data supplied from the multiple viewpoint image supplying unit, generates left eye viewpoint image data (the arrow from item 30 to item 2900) and right eye viewpoint image data (the arrow from item 32 to item 2930) of an image viewed from a viewpoint in conformity with the request information;

- an image synthesizing unit (unit responsible for fig. 11, item 1180) that synthesizes the left eye viewpoint image data and the right eye viewpoint image data generated by the image generating unit ("another display device such as a HMD. . . may be used" at ¶ 0208; the HMD configuration is shown in fig. 12a that can replace the fig. 12b configuration in fig. 29), based on display unit information from the request information, by joining the left eye viewpoint image data and the right eye viewpoint image data side-by-side (fig. 12a, items 1200, 1220 are side-by-side; e.g., fig. 1b, item 160); and

- a transmitting unit (unit responsible for fig. 11, item 1180; fig. 8, items 806, 808) that transmits the image data to the network.

Yoon does not explicitly disclose (i) the multiple viewpoint image supply unit selecting necessary image data from coded and stored multiple viewpoint image data of images, and then

decodes; and (ii) a coding unit that encodes image data synthesized by the image synthesizing unit.

Chiang teaches a stereoscopic video coding and decoding system (fig. 2) that includes a (i) a coding unit (fig. 2, items 205, 225) that encodes image data synthesized by a image synthesizing unit (unit responsible for incoming items 200, 210 of fig. 2); and (iii) a multiple viewpoint image supply unit (fig. 2, item 245) selecting necessary image data (from items 240, 250 at fig. 2) from coded and stored multiple viewpoint image data of images (MPEG-2 encoded and stored images that came from fig. 2, item 255).

It would have been obvious to one of ordinary skill in the art at the time the invention was made (i) for the image data selected by the multiple viewpoint image supply unit of Yoon to be coded and stored multiple viewpoint image data of images as taught by Chiang; and (ii) for the system of Yoon to include a coding unit that encodes image data synthesized by the image synthesizing unit as taught by Chiang “to achieve stereoscopic coding of video.” Chiang at 1:44-45. The system of Chiang teaching the encoding/decoding process above “provides better reproduction of the perspective viewpoint difference between the left and right channels”. Chiang at 4:9-12.

Allowable Subject Matter

[8] Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

[9] Claims 6-10 allowed.

Reasons for Indicating Allowable Subject Matter

[10] The following is a statement of reasons for the indication of allowable subject matter:

Regarding Claim 4, while the prior art of record discloses the image data distributing system of Claim 1, the prior art of record does not teach adding management information for enabling access to the image data of individual viewpoints and random access, to the multiple viewpoint image data. Claim 5 allowable by analogy.

Regarding Claim 6, while the prior art of record discloses the image data distributing system of Claim 1, the prior art of record does not teach judging whether the received image data is of two-dimensional image data or stereoscopic image data. Claim 7 allowable by analogy.

Regarding Claim 8, while the prior art of record discloses the image data distributing system of Claim 1, the prior art of record does not teach adding to the image data to be transmitted a piece of information that indicates whether the image data is of two-dimensional image data or stereoscopic image data. Claims 9-10 allowable by analogy.

Conclusion

[11] Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID P. RASHID whose telephone number is (571)270-1578 and fax number (571)270-2578. The examiner can normally be reached Monday - Friday 7:30 - 17:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David P. Rashid/
Examiner, Art Unit 2624

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